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# NEW PLANT INTRODUCTIONS

TENTH ANNUAL CATALOGUE

1921 - 1922

CONTAINING DESCRIPTIONS OF THE MORE IMPORTANT  
NEWLY INTRODUCED PLANTS NOW READY  
FOR EXPERIMENTERS.

NOTE: Since the Federal Horticultural Board inspection is made at the time the plants are dug preparatory to their being sent out, it may be necessary to withhold some of the plants herein listed because of quarantine regulations.

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION  
BUREAU OF PLANT INDUSTRY  
UNITED STATES DEPARTMENT OF AGRICULTURE.



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# ANNUAL CATALOGUE

## NEW PLANT INTRODUCTIONS

Experimenters are particularly requested to read this  
Introductory Note

THIS CATALOGUE describes many species and varieties of newly introduced foreign plants which have not been widely tested in this country. Our knowledge of them, consequently, is very limited and we cannot predict their behavior with any degree of certainty.

These Newly Introduced Plants have been imported because of some direct or indirect use which it is thought can be made of them. They are first placed at the disposal of Experimenters of the United States Department of Agriculture and the State Experiment Stations of the country, but many of them will be available to such private experimenters as have the necessary facilities and desire to test them. Since these plants must be grown by private individuals before their commercial value is determined, experimenters who test them are assisting in a very practical way in the plant introduction work of the country. A new plant industry often arises through the success of some private individual who proves that an introduced plant will grow in his region and finds a use for its product.

This Catalogue is sent to those who have qualified as Experimenters with the Office of Foreign Seed and Plant Introduction and have indicated their willingness to receive and care for the plants sent to them for experimental planting in their region. The number of plants that can be propagated from an introduction is usually limited, and as it is desired to test them over as wide a range as possible in order to determine their adaptability to soil and climatic conditions, each Experimenter is usually sent a single plant under any one introduction number, and often, because of the small number of plants available, it is found impossible to send him any of the particular kinds he asks for.

These new and valuable plants are placed in the hands of Experimenters **with the understanding that they will be given unusual attention**, and that the Experimenter will report to this Office on their behavior and their apparent value in his community. Not only have these Introduced Plants cost a great deal of money, but they also have involved, in many cases, dangers and hardships to our Agricultural Explorers sent out to find them. Nothing is more disheartening to the



man who has risked his life in obtaining some new and valuable plant than to find on his return to America that the Experimenter to whom the plant was sent did not care enough for it even to keep the label attached to the plant or to prevent its being choked by weeds.

While to the Experimenter some of these plants may seem to be of little value, final judgment upon them should be reserved until they have been given a thorough trial. Even to know that an introduced plant will grow in a certain locality is often of distinct value.

The special labels which are attached to the plants sent out give a brief description of their uses. The number on the label is the Seed and Plant Introduction (S.P.I.) number and corresponds to the number of a published description of the plant. Since reports may be requested from Experimenters at any time, or a representative of this Office may call to inspect their plantings, **it is important either that the label be kept with the plants**, or that a plot be made of the planting in order that the location of the plants may be known at all times.

Accompanying this catalogue are complete check lists of all seeds and plants ready for distribution at the Introduction Gardens during the season 1921-22. Applicants for plants or seeds should fill out all blanks on the first sheet accompanying the check lists, place a check mark to the left of the S.P.I. number of each plant desired, and **return the lists promptly** to this Office. The final judgment, however, as to whether a plant should be sent to a certain region must be left to the officials of this Office. Plants will not be sent to a region thought to be unsuited to them.

Requests are acted upon in the order of the receipt of the returned checked lists, and the plants requested are reserved for the Experimenter to be sent to him at the time designated by him if it is possible to do so. The **shipping season** as a rule **extends from December 1st to April 15th**.

All seeds and plants imported by this Office are examined upon their arrival by the Federal Horticultural Board, and the plants grown from these original importations are further inspected before they are sent out. Every effort is made to insure the distribution of only such plants as are healthy and are free from injurious plant diseases or insect pests.

DAVID FAIRCHILD,  
Agricultural Explorer in Charge.



## DESCRIPTIVE LIST.

50711. *ACACIA CATECHU*. From Darjiling, India. Seeds presented by G. H. Cave, Director, Lloyd Botanic Garden. A moderate-sized deciduous tree, common in India and Burma. The bark is dark brown, much cracked; leaves bipinnate; flowers white or pale yellow, in spikes. Catechu, a commercially important resinous extract, is obtained by boiling down a solution of the chopped wood for 20 hours. Kath, used as an ingredient of betel-leaf preparations, crystallizes from this solution. The wood is very durable, seasons well, and takes a fine polish.

48039. *ACACIA CULTRIFORMIS*. From Australia. Presented by J. Goffart. A tall bushy shrub with triangular, leathery phyllodia. The yellow flowers occur in globular heads in numerous racemes much longer than the leaves. If kept well pruned, this acacia forms an excellent hedge.

48040. *ACACIA CYANOPHYLLA*. From West Australia. Presented by J. Goffart. A handsome shrub, up to 18 feet in height, with drooping branches and glabrous, lanceolate phyllodia. The numerous, large, golden yellow flower-heads occur in groups of three to five in short racemes.

49745. *ACACIA FARNESIANA*. Collected in Guatemala by Wilson Popenoe, Agricultural Explorer. A much-branched, ornamental small tree with compound leaves made up of linear leaflets and producing very fragrant yellow flowers in globular heads. This species is grown in France as a source for perfume.

48045. *ACACIA HOMALOPHYLLA*. From J. Goffart, Tangier, Morocco. A small tree native to New South Wales and Victoria, where it grows in bleak arid situations not subject to severe frost. The foliage is much used for fodder. The hard, heavy wood is much valued for cabinet-making, turners' work, and the manufacture of tobacco pipes, rulers, napkin rings, etc.

48053. *ACACIA MICROBOTRYA*. From J. Goffart, Tangier, Morocco. A tall Australian shrub, which grows best along river and creek valleys. An edible gum of a pleasant sweetish taste is produced by this shrub, one plant being said to yield as much as 50 pounds in a season.

48055. *ACACIA NERIIFOLIA*. From J. Goffart, Tangier, Morocco. A handsome east Australian tree, 40 to 50 feet in height, with slender branches, and producing small, globular flower-heads in simple slender racemes shorter than the linear phyllodia. The wood is prettily marked, close grained, and tough.



50107. *ACACIA PALLENS*. From Burttholm, Vereeniging, Transvaal. Presented by J. Burt-Davy. A medium-sized tree with spiny trunk and branches, compound leaves 3 to 4 inches long, and dense flower spikes about 2 inches long. In the Transvaal, where this species is native, it is valued for its very hard durable wood.

42683. *ACTINIDIA CORIACEA*. From central China. Received through Vilmorin-Andrieux & Co., Paris. A strong-growing, ornamental, woody vine suitable for porches. The smooth, leathery, stiff-pointed leaves are 4 to 6 inches long, and the clustered, red (rarely yellow) flowers are occasionally white margined. The spotted, cylindrical berries are less than half an inch long.

52307. *AGATI GRANDIFLORA*. From Colombia. Collected by Wilson Popenoe, Agricultural Explorer. A handsome flowering tree reaching a height of 25 feet and bearing beautiful pinnate foliage. The white flowers, 2 inches long, are shaped like those of *Clianthus*. The tree begins flowering when quite young and when properly trained is very attractive.

49746. *ALBIZZIA* sp. From Guatemala. Collected by Wilson Popenoe, Agricultural Explorer. A medium-sized leguminous tree with bipinnate leaflets. Produces an abundance of small yellow flowers.

52449. *ALEURITES MOLUCCANA*. Candlenut or Lumbang. From Porto Rico. Presented by D. W. May. Candlenut or lumbang oil is used in making soap, and in the Philippine Islands the press cake is highly prized as a fertilizer. The nut is eaten to some extent by the native Porto Ricans, but the unripe kernels act as a violent purgative. If fully mature and roasted they are doubtless harmless (except in cases of personal idiosyncrasy). Native to the Pacific Islands.

47636. *ALPINIA ALLUGHAS*. From Darjiling, India. Seeds presented by G. H. Cave, Director, Lloyd Botanic Garden. This plant, common in low moist places in eastern India, has shiny, lanceolate leaves and large flowers of a beautiful rose color. The large aromatic rhizomes are used by the natives medicinally and as a substitute for ginger.

39434. *AMPELOPSIS ACONITIFOLIA*. From Ping yan fu, Shansi, China. Collected by F. N. Meyer, Agricultural Explorer. A handsome vine related to Virginia Creeper, with finely cut, light-green, downy leaves and dull yellow berries. Valued as a porch, or pergola vine. Grows rapidly and is comparatively hardy.

33215. *AMYGDALUS COMMUNIS*. Malagueña Almond. From Granada, Spain. Introduced by W. T. Swingle. An important commercial



variety of almond of fine quality. Large quantities of this nut are annually exported from Spain and are used in the manufacture of the best grades of confectionery. This variety succeeds in dry situations.

33217. AMYGDALUS COMMUNIS. De la P. Almond. From Granada, Spain. Received through Walter T. Swingle. A large, early, hard-shelled variety, highly recommended by Spanish growers.

35205. AMYGDALUS FENZLIANA. From Tiflis, Caucasus, Russia. Presented by the Director, Botanic Gardens. A shrubby, ornamental almond, which produces attractive white flowers in early spring. Recommended for testing as stock for almonds and other stone fruits in mild-wintered regions of this country; also for breeding experiments to obtain a dwarf, drought-resistant strain of almonds.

34601. AMYGDALUS MIRA. Wild Chinese Peach. Collected by E. H. Wilson of the Arnold Arboretum. A tree, reaching a height of 30 feet, found growing north of Tatsienlu, Szechwan, China, at an altitude of 9,000 feet. Fruit an inch in diameter, fuzzy with *smooth* stone. This species blooms late in the spring and on this account may prove useful in breeding experiments and as a stock. Its fruit is not edible, strictly speaking.

32377. AMYGDALUS PERSICA. Mexican Peach. Seeds originally secured by G. Onderdonk, Agricultural Explorer. Scions of selected seedling received from the Field Station, San Antonio, Texas. A large, greenish-colored, clingstone peach of good flavor. Ripens early in September at San Antonio. Recommended as a good canning peach.

33219. AMYGDALUS PERSICA. Vainqueur Peach. From Granada, Spain. Scions introduced by Walter T. Swingle. A medium-sized, very early-ripening peach with white skin flushed with red. The flesh is soft, white, and juicy; pit pink. This variety is not a good shipper, but has proved an excellent peach for home use.

38178. AMYGDALUS PERSICA. Fei Peach. From Feitcheng, China. Grafted trees and scions collected by F. N. Meyer, Agricultural Explorer. The fruits of this clingstone variety are very large, sometimes weighing a pound each, pale yellow with a slight blush. Flesh white, pink near the pit, very sweet, juicy, and aromatic. Possesses remarkable keeping and shipping qualities. Ripens in August in California.

40721. AMYGDALUS PERSICA. Peach. From China. Seeds collected along the roadside by F. N. Meyer, Agricultural Explorer. A medium-sized clingstone peach with slightly pinkish-tinged yellow skin. The firm white flesh, tinged with red near the



stone, is very aromatic, sweet, and juicy. Ripens early. Selected seedling.

41395. AMYGDALUS PERSICA. Dwarf Peach. From Kiayingchau, Swatow, China. Presented by Geo. Campbell. A Chinese ornamental grown in pots as a house plant. Mr. Campbell reports one tree, 15 inches high with stem no larger than a lead pencil, as bearing five full-sized, white-fleshed clingstone peaches of good quality, crowded on the main trunk. The blossoms are showy and the prettily colored fruits hang on the trees for a long time. Buds from original seedlings. Has not yet fruited in America.

43124. AMYGDALUS PERSICA. Peach. Var. A 1. From New Zealand. Presented by H. R. Wright. Said to be an ideal market peach, which bears heavily each year. The growth is short, thick, and compact, with very large handsome foliage.

43127. AMYGDALUS PERSICA. Peach. Var. Ideal. From New Zealand. Plants presented by H. R. Wright. This variety is medium early, with fruits of good size. The firm, golden yellow flesh is of fair quality.

43129. AMYGDALUS PERSICA. Peach. Var. Late Champion. From New Zealand. Plants presented by H. R. Wright. A large fruit with bright yellow skin having a red blush. Flesh bright yellow, juicy, and of good flavor. Said to be one of the best of late freestone peaches; a fair shipper, a good drier, and of good quality for canning.

43130. AMYGDALUS PERSICA. Peach. Var. Lippiatt's Late Red. From New Zealand. Plants presented by H. R. Wright. A medium-sized clingstone peach with yellowish skin overspread with a red blush. Flesh firm; pit red, coloring the flesh. Flavor very good. Of value for table use and home canning.

43132. AMYGDALUS PERSICA. Peach. Var. Motion's Cling. From New Zealand. Plants presented by H. R. Wright. A large clingstone peach resembling the Stark in appearance. Said to be an ideal market variety; has a rich color and is a prolific yielder.

43133. AMYGDALUS PERSICA. Peach. Var. Muir's Perfection. From New Zealand. Plants presented by H. R. Wright. A fine mid-season peach of large size and excellent flavor. The white-fleshed fruits are beautifully colored.

43134. AMYGDALUS PERSICA. Peach. Var. Osprey Improved. From New Zealand. Plants presented by H. R. Wright. Said to be an excellent peach for home use. Of good size and quality, but too soft and lacking in color for the market. A very dependable yielder.



43135. AMYGDALUS PERSICA. Peach. Var. Paragon. From New Zealand. Plants presented by H. R. Wright. A yellow-fleshed clingstone peach said to be a good yielder from year to year. This variety is considered of unusual merit in New Zealand.

43136. AMYGDALUS PERSICA. Peach. Var. Shipper Cling. From New Zealand. Plants presented by H. R. Wright. A very large clingstone peach of attractive appearance. The skin is orange-yellow with a red cheek. This variety is considered excellent for canning as it remains intact when preserved. The flavor is said to be excellent. A yellow-fleshed variety.

43137. AMYGDALUS PERSICA. Peach. Var. Up-to-date. From New Zealand. Plants presented by H. R. Wright. This is said to be a vigorous-growing, heavy-bearing variety producing large, freestone, yellow-fleshed fruits, suitable for canning and home use. Fruits are too soft for long shipments.

43291. AMYGDALUS PERSICA. Peach. From Canton, China. Seeds presented by J. R. Josselyn, American Vice Consul. This freestone peach, grown in the hilly districts of Canton, China, is small, very sweet, of good color, and with white flesh. Budded plants from selected seedlings.

48508. AMYGDALUS PERSICA. Indian Blood Peach. A vigorous-growing tree bearing freestone fruits with dark blood-red, very juicy flesh of excellent quality. The skin is greenish gray suffused with red. This peach matures late and seems promising for a canning peach. Seedlings.

26503. AMYGDALUS PERSICA NECTARINA. Nectarine. From Chinese Turkestan. Seeds presented by E. Cotes. Fruits large, freestone, creamy yellow with red blush. The flesh is creamy white, red at stone, juicy, crisp, subacid, and of very good quality. Skin rather tough, but parts readily from the flesh. A good shipper. Budded from selected seedling.

30647. AMYGDALUS PERSICA NECTARINA. Nectarine. From Khotan, Chinese Turkestan. Collected by F. N. Meyer, Agricultural Explorer. This variety, known locally as "Togatch Moneck," was introduced as seed with a view to securing by selection a cold-resistant type. Buds from selected seedling.

34685. AMYGDALUS PERSICA NECTARINA. Quetta Nectarine. From Quetta, British India. Seeds presented by Lieutenant W. L. Maxwell. This variety produces fruits of splendid size and appearance. The skin is green, heavily blotched with red. The flesh is greenish, red around the pit, juicy and of excellent flavor; pit large, red. A good shipper and one of the finest nectarines grown. Budded from selected seedling.

34687. AMYGDALUS PERSICA NECTARINA. Crosby Nectarine. From British India. Presented by Rev. P. J. P. Hendricks. This is a freestone fruit of fair size and quality. The stone is relatively small in proportion to the size of the fruit. Budded from selected seedling.

43139. AMYGDALUS PERSICA NECTARINA. Nectarine. Var. Ansenne. From New Zealand. Plants presented by H. R. Wright. The large, red, freestone fruits are of splendid appearance, excellent in flavor, and borne freely. This variety seems worthy of extended trial in this country.

43140. AMYGDALUS PERSICA NECTARINA. Nectarine. Var. Diamond Jubilee. From New Zealand. Plants presented by H. R. Wright. A very large, highly colored nectarine of excellent flavor. Freestone fruits with melting, juicy, sweet flesh.

43141. AMYGDALUS PERSICA NECTARINA. Nectarine. Var. Gold Mine. From New Zealand. Plants presented by H. R. Wright. A fine, large, freestone nectarine of red and yellow color. The flesh is cream-white, delicately flavored, and of very high quality. This variety seems worthy of wide dissemination.

43142. AMYGDALUS PERSICA NECTARINA. Nectarine. Var. Lippiatt's Late Orange. From New Zealand. Plants presented by H. R. Wright. The fruits of this variety are extra large, and handsomely colored, being orange and deep, dark red. The flesh is juicy with a distinctive, excellent flavor.

43143. AMYGDALUS PERSICA NECTARINA. Nectarine. Var. Muir's Seedling. From New Zealand. Plants presented by H. R. Wright. An extra large, red, freestone nectarine of handsome appearance and wonderful quality. Flesh slightly pink at pit, juicy, and of unusually fine flavor.

43144. AMYGDALUS PERSICA NECTARINA. Nectarine. Var. New Boy. From New Zealand. Plants presented by H. R. Wright. The fruits of this variety are of medium size, green, mottled with red. The flesh is of fair quality, red at pit. Very prolific.

43146. AMYGDALUS PERSICA NECTARINA. Nectarine. Var. Surecrop. From New Zealand. Plants presented by H. R. Wright. A very prolific variety with medium-sized, green fruits mottled with red. The flesh is of fair quality with mild, but not very distinctive, flavor.

51344. ANIGOZANTHOS MANGLESII. From Perth, Western Australia. Seeds presented by H. C. Trethowan. A perennial, tufted plant belonging to the Amaryllidaceae, with glaucous leaves a foot or more long, and erect branching stem clothed with thick crimson felt of peculiar hairs. The flowers, in short, terminal,



spiked racemes, are 2 inches long, curved, and clothed with hairs of a bright green and rich crimson color. Suitable for greenhouse culture. Native to Southwest Australia.

36562. *ANNONA CHERIMOLA* X *SQUAMOSA*. A hybrid between the cherimoya and the sugar-apple, produced by Edward Simmonds at the Miami Plant Introduction Garden. The fruit combines the unusual sweetness of the sugar-apple with the firmness of flesh and better shipping qualities of the cherimoya. The trees show unusual vigor.

51404. *ANNONA DIVERSIFOLIA*. Ilama. From Guatemala. Seeds presented by H. W. Goforth, American Consul. A small tree with thin, membranaceous foliage and heart-shaped fruits about 6 inches long. The edible pulp is tinged with rose-color when ripe.

49289. *ANNONA RETICULATA*. Custard-apple. From Lourenco Marques, Mozambique. Collected by Dr. H. L. Shantz, Agricultural Explorer. An excellent local variety with fruits 4 inches in diameter. The fruits are cut open, and eaten with a spoon, - there being no core, but many seeds. The flavor is sugary and very agreeable.

49980. *ANNONA RETICULATA*. Custard-apple. From Kongola, Belgian Kongo. Collected by Dr. H. L. Shantz, Agricultural Explorer. A very good custard-apple, said to produce fruit in three years from seed.

50211. *ANNONA RETICULATA*. Custard-apple. From Coban, Guatemala. Collected by Harry Johnson. A heavy-bearing tree, 25 feet high, with very pleasing, light-red fruits about 4 inches long. The flesh is of the color and texture of a ripe Bartlett pear.

49290. *ANNONA SQUAMOSA*. Sugar-apple. From Lourenco Marques, Mozambique. Collected by Dr. H. L. Shantz, Agricultural Explorer. A locally grown variety obtained from the market. The roundish fruits, about 4 inches in diameter, contain a sweet granular pulp of pleasant flavor.

26565. *ARALIA CORDATA*. Udo. From Japan. A vegetable worthy of wide cultivation for its edible shoots which are blanched in spring by mounding with earth or by covering with a closed drain tile. The plants are set 3 or 4 feet apart and in summer make an attractive screen of foliage, 4 to 6 feet high, which dies down in the fall. They may yield shoots for nine years or more. Shoots may be peeled, sliced into ice water, and served with French dressing, or may be stewed and served like asparagus. Special directions for growing and cooking will be furnished on application.

51012. *ARTOCARPUS INTEGRA*. Jackfruit. From Porto Rico. Seeds presented by T. B. McClelland. A very large tree, native to southern India and Malaysia, and valued chiefly for its enormous, green, odoriferous fruits which are borne on the trunk and older branches. The whitish soft pulp is eaten raw or boiled and fried, and the large seeds are roasted and used in curries. A handsome tree on hammock lands in South Florida.

51361. *BAMBOS BALCOOA*. Bamboo. From Lucknow, Oudh, India. Seedlings from seeds presented by H. J. Davies, Superintendent, Government Horticultural Gardens. The large and characteristic bamboo of the Bengal villages. Has stem 50 to 70 feet in height; used for building, scaffolding, and other purposes which require both size and strength. Long immersion in water is thought to make the timber firmer and less subject to attacks by borers.

48229. *BAMBOS TULDA*. Bamboo. From Allahabad, India. Seeds presented by P. H. Edwards. This, the common Bengal bamboo, has dark green stems and pale soft leaves pubescent beneath. The culms are used for building, for fishing rods, the making of furniture, etc. The split culms are made into mats, window shades, etc. Not as hardy as Japanese bamboos.

50613. *BEGONIA SP.* From Coban, Alta Verapaz, Guatemala. Seeds presented by Harry Johnson. A robust grower with cut leaves having few hairs and with deep green markings on a lighter field. Flowers pink.

47836. *BOEHMERIA MACROPHYLLA*. From Darjiling, India. Seeds presented by G. H. Cave, Director, Lloyd Botanic Garden. A broad-leaved shrub, native to northern and northeastern India where it ascends to 4,000 feet, the bark of which yields a beautiful fiber much prized for the making of fishing nets.

47837. *BOEHMERIA PLATYPHYLLA*. From Darjiling, India. Seeds presented by G. H. Cave, Director, Lloyd Botanic Garden. A large shrub or small tree with opposite, broadly ovate leaves, native to the Khasia hills, eastern Bengal and southern India. The wood is moderately hard and of a reddish brown color. All the species of this genus are said to yield good fibers.

43471. *BOUGAINVILLEA SP.* From British Guiana. Cuttings presented by the Department of Science and Agriculture. An ornamental tropical woody vine commonly cultivated in several of the British West Indian Islands and in British Guiana, where it produces, twice a year, handsome crimson flowers which are more attractive than the dazzling purple flowers of the common variety.

51116. *BUNCHOSIA SP.* From San Jose, Costa Rica. Seedlings collected by Wilson Popenoe, Agricultural Explorer. A small



slender tree, which bears short racemes of yellow flowers followed by elliptic, bright red fruits about an inch long. The thin skin surrounds a small quantity of red pulp and a large elliptic seed. Like that of the persimmon the fruit should not be eaten until quite soft.

51405. BYRSONIMA SP. From Guatemala. Seeds collected by Wilson Popenoe, Agricultural Explorer. A small tree with opposite, entire leaves and red and yellow flowers in racemes at the ends of the branches.

50071. CAESALPINIA PULCHERRIMA. From Kongola, Belgian Kongo. Seeds collected by Dr. H. L. Shantz, Agricultural Explorer. A leguminous ornamental shrub or small tree, widely distributed throughout the Tropics. Produces large open clusters of very attractive flowers with scarlet petals edged with gold.

47838. CALLICARPA MACROPHYLLA. From Darjiling, India. Seeds presented by G. H. Cave, Director, Lloyd Botanic Garden. A tall shrub with wrinkled leaves, 6 to 10 inches long, and producing small, rose-colored flowers in much-branched cymes. The heated leaves are applied as a poultice for rheumatic joints.

51283. CALLITRIS DRUMMONDII. From Blackwood, South Australia. Seeds presented by Col. E. Ashby. A dwarf, ornamental, bright green, cypresslike conifer remarkably resistant to drought.

46821. CANNA EDULIS. From Hawaii. Queensland Arrowroot. Tubers presented by the Agricultural Experiment Station, Honolulu. A vigorous herbaceous perennial, cultivated in warm regions for the starch obtained from the edible tubers. The quality of this starch is said to compare favorably with that of the West Indian arrowroot. In Queensland, in 1916, over 660,000 pounds of starch were produced from about 3,000 tons of tubers.

50072. CANNA INDICA. From Belgian Kongo. Seeds collected by Dr. H. L. Shantz, Agricultural Explorer. A wild canna with small red flowers. In India the seeds are sometimes used for shot, and are made into necklaces and other ornaments; they yield a purple dye, but it is not very permanent. Tubers yield some starch.

38788. CAPSICUM ANNUUM. Pepper. From China. Collected by F. N. Meyer, Agricultural Explorer. A very elongated variety of Chili pepper. In China, they are commonly dried and kept for winter use; ground up and mixed with sesame oil and a little salt the dried peppers are used as a condiment in soups. Chinese name "Chang la chiao" (long chili pepper).

49021. CAPSICUM ANNUUM. Red Pepper. From Barcelona, Spain. Seeds received through Mr. C. B. Hurst, American Consul General. This Spanish sweet pepper, known as "Pimiento morron muy grande," (very large sweet pepper), bears an abundance of large, smooth pods of mild pleasant flavor. This pepper is similar to the Bull-nose variety but bears more abundantly and the fruits are smoother.

49988. CAPSICUM ANNUUM. Red Pepper. From Nionga, Belgian Kongo. Seeds collected by Dr. H. L. Shantz, Agricultural Explorer. A variety of paprika of spreading habit, with very narrow leaves.

52451. CARAGANA ARBORESCENS. Siberian Pea Tree. Var. *Sophoraefolia*. Seeds presented by Vilmorin-Andrieux & Co., Paris. A hardy ornamental shrub or small tree up to 20 feet in height with pale or bright, yellow flowers three-fourths of an inch long. Extensively grown in Russia for ornamental hedges. Very drought and cold resistant. This variety has extremely small leaflets.

52452. CARAGANA BOISI. Pea Tree. From western China. Seeds presented by Vilmorin-Andrieux & Co., Paris. An ornamental up to 6 feet in height, with abruptly pinnate leaves and solitary, bright yellow flowers.

51389. CARICA CANDAMARCENSIS. From Bogota, Colombia. Seeds collected by Wilson Popenoe, Agricultural Explorer. A tree smaller than *Carica papaya* and bearing smaller, more angular fruits. The fruits are elliptic, deep yellow when ripe, and very aromatic. The fruit is cooked in sirup and makes a very good jam or preserve. It is also excellent when stewed.

52620. CARICA PAPAYA. Papaya. From Honolulu, Hawaii. Seeds presented by J. M. Westgate. This variety, known as the "Solo," produces numerous medium-sized fruits of unusually high quality and resistance to fungous attacks. The fruit is pyriform, somewhat irregular, and colors well. The flesh is of medium thickness, bright yellow, tender almost to melting, and of delicious flavor even near the stem end. Seedlings seem to carry the same qualities as the parent tree.

52810. CARICA PAPAYA. Papaya. From Lourenco Marques, Mozambique. Seeds presented by John A. Ray, American Consul. A variety not yet tested in America.

21030. CASIMIROA TETRAMERIA. Matasano. From Tegucigalpa, Honduras. Seeds received through Dr. R. Fritzgartner. A large tree which bears smooth green fruits the size of a large orange, which contain large seeds surrounded by a fruit flesh of a beautiful golden yellow color, which is very sweet



50654. CASSIA BICAPSULARIS. From Guatemala, Guatemala. Seeds collected by Wilson Popenoe, Agricultural Explorer. A leguminous shrub, 6 to 10 feet high, often trailing, with pinnate leaves and few-flowered clusters of yellow, nearly regular flowers. Native name, "Cola de Pato."

50655. CASSIA EMARGINATA. From Guatemala, Guatemala. Seeds collected by Wilson Popenoe, Agricultural Explorer. A medium-sized leguminous tree with ornamental, pinnate leaves and attractive yellow flowers. The dried leaves are a source for senna. Native name, "Vainillo."

49294. CASSIA SP. From Nelspruit, Transvaal. Seeds collected by Dr. H. L. Shantz, Agricultural Explorer. An acacialike leguminous shrub with pinnate leaves and yellow flowers followed by long, dark, sticky pods.

45862. CASTANEA MOLLISSIMA. Chinese Chestnut. This species is resistant to the chestnut-bark disease, though not entirely immune. The tree is hardy, of low-branching, open-headed growth, and is valued for its nuts but is too small for timber purposes. The nuts are about the same size as those of the American chestnut and of good quality. Being seedlings, the fruits they produce will vary in size and sweetness.

49720. CASUARINA CUNNINGHAMIANA. From San Gabriel, Calif. Seeds presented by William Hertrich. A tree 60 to 70 feet high, native to New South Wales and New Zealand. The hard, close-grained, prettily marked timber is used for shingles and staves. The tree is a fine ornamental, more attractive and probably hardier than the too commonly grown "Australian pine," *C. equisetifolia*.

46883. CASUARINA STRICTA. From Australia. Seeds presented by B. Harrison, Burringbar, New South Wales. Related to the "Australian pine," *C. equisetifolia*, which is altogether too much planted in southern Florida as a shade and avenue tree. Introduced as a possible improvement over this latter species either in respect to appearance or hardness.

49373. CHAMAEDOREA SP. Dwarf Palm. From Tucuru, Alta Verapaz, Guatemala. Plants collected by Wilson Popenoe, Agricultural Explorer. A handsome dwarf palm, peculiarly suited for house decoration. It stands well the dry room-temperature of American dwelling houses. Found under dense forests in several parts of the Alta Verapaz, occurring only in regions where there are limestone outcroppings. Local name, "Pacayito."

CHAYOTA EDULIS. Chayote. From Mexico, Central America, and the West Indies. A vigorous-growing, perennial-rooted vine, suited to the Southern States; yields enormous crops of fruits

that keep well and are more delicately flavored than the squash. The freedom from fiber, the fine texture, and the ease of preparation render the chayote adaptable for use in a variety of delicious dishes, - it may be creamed, fried, stuffed, served in stews, baked with meats, pickled or preserved, etc.

50472. *CHRYSOPHYLLUM* SP. From Para, Brazil. Seeds presented by Andre Goeldi. A small ornamental tropical tree with handsome foliage.

49872. *CITRULLUS VULGARIS*. Watermelon. Seeds originally received from A. D. Voyeikoff, Vladivostok, Siberia. Ripe melons of this variety were secured at the Chico, Calif., Plant Introduction Garden, 45 days from planting. The melons range from 8 to 14 inches in diameter, are nearly round and of a purplish green color. Flesh red; quality fair to good. While this melon could not compete in quality with commercial varieties, yet the short season required for its development makes it valuable for many sections.

23028. *CITRUS LIMONIA*. Lemon. From China. Var. Fengtai. Plants collected by F. N. Meyer, Agricultural Explorer, at Fengtai near Peking. An ornamental lemon cultivated by the Chinese as a decorative plant. Small pot-plants frequently produce a dozen or more large beautifully colored lemons. The skin is thin and waxy and the flesh is inclined to be orange in color. The fruits can be used in the same way as commercial lemons. The plant can be successfully propagated from cuttings.

52337. *CLEMATIS TANGUTICA OBTUSIUSCULA*. From Central Asia. Seeds presented by F. G. Preston, Cambridge Botanic Garden. A handsome ornamental climbing shrub with nodding, solitary, yellow flowers on erect peduncles. The leaves, 3 to 5 inches long, consist of lanceolate toothed segments up to  $2\frac{1}{2}$  inches long.

49400. *COCCOSIPSILUM REPENS*. From Tucuru, Alta Verapaz, Guatemala. Seeds collected by Wilson Popenoe, Agricultural Explorer. An interesting herbaceous plant found on moist slopes. It creeps along the ground making stems about 3 feet in length, and producing pale blue flowers about half an inch broad, followed by bright blue fruits half an inch in diameter and very ornamental.

15395. *COLOCASIA ESCULENTA*. Trinidad Dasheen. From Trinidad, West Indies. A valuable root crop for the South. Related to the elephant-ear. Produces large corms and tubers which are used like potatoes, but are richer in protein and starch, and have a nutty flavor. Leaves ACRID; but acidity can be removed by parboiling with a little baking soda and the leaves



then make excellent greens. Special directions for growing and cooking will be furnished on application.

22471. *CORYLUS AVELLANA*. Filbert. Var. *Bysance*. One of the strongest and most vigorous growers of all the filberts. Differs considerably from others in leaf characters and in possessing a rather corky bark. Of value as grafting stock. Originally introduced by Felix Gillet from the Mediterranean region.

43992. *COTONEASTER HORIZONTALIS PERPUSILLA*. From China. Received through the Arnold Arboretum, Jamaica Plain, Mass. A low Chinese shrub of prostrate habit with almost horizontal branches in two dense series. Leaves roundish-oval, less than one-third of an inch long. Flowers erect, pink, and either solitary or in pairs. Oval fruits bright red, one-fourth of an inch in diameter. A very effective fruiting shrub for rockeries.

49032. *COTONEASTER ZABELI*. From Western Hupeh, China. An ornamental shrub up to 8 feet high, with oval elliptic leaves and pink flowers in loose clusters, followed by attractive red fruits.

49072. *CRATAEGUS DAWSONIANA*. From Jamaica Plain, Mass. Seeds collected by H. E. Allanson. A small tree with spreading branches forming an irregular crown. Has dark, yellow-green, oval, acuminate leaves, and many-flowered corymbs followed by orange-red, yellow-fleshed, obovate fruits borne on long, slender, red pedicels.

41690. *CUPRESSUS GLABRA*. Cypress. From Sedona, Ariz. Received through J. F. Derrick. A tree 25 to 30 feet in height, with a compact, narrowly oval, somewhat pyramidal crown. The branches, particularly of the younger trees, are strongly upright, the bark is thin, smooth, dark purple-red; the trunk tapering, sometimes divided into several branches. Foliage bright blue-green.

51602. *DATURA FASTUOSA*. From the Island of Guam. Seeds presented by Glen Briggs, Agronomist, Agricultural Experiment Station. An ornamental herbaceous annual common throughout India and the East Indies. Leaves entire or deeply toothed; flowers 7 inches or more in length, and varying from white to lavender or rose.

51351. *DATURA SP.* From Bogota, Colombia. Collected by Wilson Popenoe, Agricultural Explorer. This is the common tree-datura which was used by the ancients as a narcotic. Found on the Bogota mesa and surrounding regions at an altitude of about 6,000 feet.

53610. *DENDROCALAMUS STRICTUS*. Bamboo. From Dehra Dun, India. Seedlings from seeds presented by R. D. Hole, Forest Botanist. The culms of this rapid-growing bamboo are usually solid and in India grow to a height of 70 feet in rich soil; they are curved near the tips, giving them a very ornamental plume-like effect. This species is reported to be resistant to droughts and to light frosts. It is a clump bamboo and spreads very slowly. The timber is strong and durable and is valued for many special purposes.

47431. *DIMOCARPUS LONGAN*. Lungan. From Port Louis, Mauritius. Seedlings from seeds presented by Gabriel Regnard. The lungan produces spherical fruits an inch or less in diameter, light brown in color, with a thin, shell-like outer covering, and white flesh similar in character to that of the lychee, but less sprightly in character. The single seed is dark brown and shining. The fruits are popular among the Chinese, but those produced so far from the American-grown seedlings are little liked by Americans. Fruits abundantly in sheltered places in southern Florida and southern California. May produce a variety with superior flavored fruits.

*DIOSCOREA ALATA*. Greater Yam. A West Indian variety of the tropical yam which is in no way related to the so-called "yam" of the Southern States which is a true sweet potato. The plant is a handsome vine suitable for porch decoration, and its tubers which sometimes weigh several pounds are similar to the white potato in composition and flavor. When baked or boiled and mashed hot they can scarcely be distinguished from white potatoes. Require deep rich soil and long growing season. A vegetable with remarkable keeping qualities; of distinct promise for Florida.

50399. *DODONAEA THUNBERGIANA*. From South Africa. Seeds presented by Joseph Benbow, Superintendent, La Mortola Gardens, Ventimiglia, Italy. A resinous shrub with viscid, shining, leathery leaves and short clusters of greenish flowers. Related to *D. viscosa* and, like it, may be useful as an ornamental shrub and as a hedge plant. A decoction of the root is used as a slight purgative in cases of fever.

47355. *ECHIUM NERVOSUM*. From the Madeira Islands. Presented by Dr. A. Robertson-Proschowsky, Nice, France. A shrubby perennial with lanceolate leaves and large ovate racemes of blue flowers. A striking ornamental when in flower.

52437. *ELAEOCARPUS SIAMENSIS*. From Bangkok, Siam. Seeds collected by J. F. Rock, Agricultural Explorer. A fine ornamental foliage tree growing to a height of about 30 feet. Leaves lanceolate, papery, 3 to 4 inches long. The white flowers occur in racemes and are followed by an abundance of seeds which are used by the natives as a narcotic.



51047. ENTELEA ARBORESCENS. Whau. From Auckland, New Zealand. Seeds presented by J. W. Poynton. A beautiful tree with extremely light wood, it being only half as heavy as cork. The large maplelike leaves are evergreen. The abundant white flowers are borne in erect cymes. The leaves are greedily eaten by cattle and horses. This tree will grow only in warm climates.

51406. ENTEROLOBIUM CYCLOCARPUM. From Guatemala City. Seeds secured by Wilson Popenoe, Agricultural Explorer. One of the most beautiful leguminous shade trees of the Pacific regions of tropical America. Extensively used in Cuba as an avenue tree. Grows to a considerable height, with trunk 3 feet in diameter, and forms a symmetrical, rounded head of attractive appearance. The leaflets close up at night. Rather tender but worth trying as a shade and avenue tree in southern Florida and southern California. The wood is said to be proof against insects and is in demand for the making of boxes and trunks. The leaves and pods are used for stock feed.

49759. ERYTHRINA SP. From Guatemala City. Collected by Wilson Popenoe, Agricultural Explorer. A flowering tree or shrub the flower buds of which constitute a vegetable of some importance among the Guatemalans, the buds being boiled with meats. Native name, "Pito."

51637. ERYTHRINA SP. From Chuka, Kenia Province, Kenia. Collected by Dr. H. L. Shantz, Agricultural Explorer. A prominent wild tree in the forests of Kenia Province now used as an ornamental in many parts of Central Africa. The leaves are trifoliolate; the blood-red flowers are produced in terminal racemes, and are followed by red pods.

49860. EUCALYPTUS ALPINA. From Western Australia. Seeds presented by F. H. Baker. A rare, slow-growing, shrubby eucalyptus with stout branches and oval or roundish, shining dark green leaves. Grows at an altitude of 4,000 feet where frosts and snowstorms occur several months in the year.

48994. EUCALYPTUS OLEOSA. From Castlemaine, Australia. Seeds presented by J. W. B. Field. A shrub or small tree from the foliage of which is obtained a yellowish oil with a pleasant mintlike or camphorlike odor. Used medicinally.

49001. EUCALYPTUS TETRAPTERA. From Castlemaine, Australia. Presented by J. W. B. Field. A very ornamental shrub or small tree, with thick, rigid, narrow leaves. The ornamental value is enhanced from the fact that the fruits, just before the lid falls off, become a brilliant crimson.

49855. EUCALYPTUS SP. From Queensland, Australia. Presented by J. A. Hamilton. Called the Flooded Gum. This species likes

plenty of moisture, but grows on poor soil. It grows very straight, and is the largest variety of eucalyptus which grows on the tableland near Cairns.

51201. EUGENIA CURRANII. From the Philippine Islands. Seeds presented by P. J. Wester. A very attractive Philippine tree attaining a height of 30 feet or more, with gnarled trunk and tortuous branches. The young growth is winged. The leaves are leathery, entire, dark green, and shining; the fruits are about the size of grapes and are borne in clusters on the bare branches or on the more mature twigs. Used locally for making preserves, wine, or pickles.

47988. EUGENIA SUPRA-AXILLARIS. From Brazil. Presented by Alfred Bircher, Middle-Egypt Botanic Station. An ornamental, glossy-leaved, evergreen shrub; bears clusters of 3 to 10 white flowers. The black globose fruits are about the size of small cherries and somewhat resemble juniper berries in flavor.

48083. EUGENIA SP. Presented by P. D. Barnhart, Sawtelle, Calif., under the name *Eugenia hookerianum*. A South American species especially valued for ornamental plantings in Florida and California. The evergreen leaves are small and glossy; the young leaves and twigs a beautiful red. Adapted for hedge plantings and as trained specimens for tubs. Responds well to shearing.

51562. EUGENIA SP. From Bogota, Colombia. Seeds collected by Wilson Popenoe, Agricultural Explorer. A very handsome arborescent shrub with deep green, almost glossy leaves and a great abundance of round fruits not quite half an inch in diameter changing from green through yellow to orange-scarlet as they ripen. The fruits are edible, but of little value.

13138. FICUS SYCOMORUS. The Sycamore of the Scriptures. From Rhodesia. Presented by W. M. Longden. A handsome, spreading, shade tree suitable for avenues in practically frostless regions. Grows very rapidly on coral limestone soils. Fruits of this variety small and inedible. Larger fruited sorts grown in Egypt for their fruits which are matured by a special process.

50658. FISCHERIA SP. From Guatemala City. Collected by Wilson Popenoe, Agricultural Explorer. A twining, ornamental, hairy shrub, with opposite, cordate leaves, and many reddish-purple flowers in racemes. Flowers in January.

51564. FRAGARIA VESCA. Strawberry. From Bogota, Colombia. Collected by Wilson Popenoe, Agricultural Explorer. The wild strawberry found about Bogota at altitudes ranging from 7,000 to 8,000 feet. The fruits are nearly round, rarely over an



inch in diameter, with numerous very small seeds. In quality they are fairly good - ordinarily juicy and of a very pleasant flavor, occasionally dry and bitter. For plant breeders.

49462. *GARCINIA LIVINGSTONEI*. From Northern Rhodesia. Collected by Dr. H. L. Shantz, Agricultural Explorer. A tropical tree with handsome, glossy, prominently veined leaves. Produces an abundance of fruits which are excellent when eaten out of hand. Native name "Munkonga."

49892. *GEIJERA PARVIFLORA*. From New South Wales, Australia. Presented by the Forestry Commission of New South Wales. A tall ornamental shrub or small tree with slender, pendulous branches and narrow leaves, 3 to 6 inches long. Has somewhat the aspect of a weeping willow. This species is remarkably drought resistant; the leaves are fed to sheep in periods of drought.

44433. *GOURLIEA DECORTICANS SUBTROPICALIS*. From Argentina. Presented by S. W. Damon. A tall tree with crooked tapering trunk about  $4\frac{1}{2}$  feet in diameter, and soft wood which is not used commercially. This variety differs from the species in the tapering trunk and in the manner in which the bark peels off.

44858. *GUAIACUM GUATEMALENSE*. From Zacapa, Guatemala. Collected by Dr. F. S. Johnson. A small, spreading tree, up to 30 feet in height, which thrives in a warm climate with little rainfall. The tree is covered in spring with a mass of lavender-purple flowers. The very hard wood is used in cabinet-making.

51268. *HIBISCUS SABDARIFFA*. Roselle. From Formosa, Argentina. Seeds presented by A. Wetmore, Biological Survey. A biennial, 3 to 5 feet high, commonly cultivated in warm countries for the delectable jelly and sauce which may be prepared from the calyces of the flowers. The young leaves may also be used for the making of jelly. The reddish calyces are collected about three weeks after blossoming. Each plant yields about two pounds of calyces. Seeds available.

51763. *HYLOCEREUS* SP. From Bogota, Colombia. Collected by Wilson Popenoe, Agricultural Explorer. The "Pitahaya blanca" (white pitahaya) is a rare, edible-fruited cactus cultivated at altitudes of 4,000 to 5,000 feet. The fruits are elliptic and rather slender in outline, about 4 inches long, light yellow, with a quantity of white translucent flesh in which are imbedded small black seeds. The flavor and quality of this particular pitahaya are rather better than the average.

50661. *IPOMOEA* SP. White Morning-glory. From Guatemala City. Seeds collected by Wilson Popenoe, Agricultural Explorer. An

ornamental climbing plant said to produce large white flowers in December. Not yet flowered in America. Seeds available.

49306. JACARANDA SP. From Lourenco Marques, Mozambique. Collected by Dr. H. L. Shantz, Agricultural Explorer. A beautiful ornamental, the most common street tree in Lourenco Marques. Has opposite, abruptly pinnate leaves and beautiful blue flowers in terminal panicles.

50239. JATROPHA CURCAS. Purging Nut. From Ujiji, Belgian Kongo. Collected by Dr. H. L. Shantz, Agricultural Explorer. A large shrub or small tree, up to 15 feet in height, cultivated in tropical regions for the oil contained in the seeds. The oil is used as a purgative, in soap-making, etc.

46862. JATROPHA URENS. Chaya. From Cuba. Presented by Mario Calvino, Director, Agricultural Experiment Station. The chaya is a shrub with fleshy branches bearing dark green 3-lobed leaves and attractive small white flowers. It is cultivated in Yucatan for the leaves; these leaves are rather firm and keep well for several days. When cooked they make a delicious greens being crisp and peculiarly free from fiber. If known and appreciated in the North, these leaves might become a winter export from Cuba and an article of commerce from southern Florida.

18577. JUNIPERUS CHINENSIS. Chinese Juniper. Var. Columnaris. Seeds collected by F. N. Meyer, Agricultural Explorer. A graceful evergreen with beautiful, glaucous or silvery green foliage and erect columnar habit of growth; somewhat like the Chinese juniper, but taller. The needles are stiffer and longer than those of the Irish juniper.

23023. JUNIPERUS SP. Juniper. From Tientsin, Chihli, China. Collected by F. N. Meyer, Agricultural Explorer. A rare, prostrate ornamental juniper with foliage of a deep bluish color. Chinese name, "Tsui po." Suitable for dooryards.

51758. KENNEDYA MONOPHYLLA. From Richmond, Victoria. Seeds presented by F. H. Baker. Var. Fruticosa. An ornamental leguminous Australian vine with solitary obtuse leaflets. It bears numerous violet or rose-purple flowers in racemes. Known as the "purple native sarsaparilla."

51769. LANSIUM DOMESTICUM. Doekoe. From Buitenzorg, Java. Seeds presented by Dr. J. C. Koningsberger, Director, Botanic Garden. An erect, symmetrical tree, 35 to 40 feet in height, with pinnate leaves 4 to 8 inches long. The velvety, straw-colored, almost round fruits, 1 to 2 inches in diameter, in clusters of 3 to 5, have a tough leathery skin and a delicious, white, aromatic, subacid flesh and bitter seeds; usually eaten out of hand, but also of culinary value. Classed as a variety of the langsats.



51391. LAVATERA SP. From Bogota, Columbia. Collected by Wilson Popenoe, Agricultural Explorer. A malvaceous shrub cultivated in dooryards at Nemocon, north of Bogota, at an altitude of 8,600 feet. The plant forms a half-woody bush 6 feet high, with purplish-red flowers 2 inches wide, resembling hollyhocks. Native name, "Malvisco."

42822. LIQUIDAMBAR FORMOSA. From Nanking, China. Received through J. H. Reisner. Ornamental tree up to 120 feet in height, resembling the sweet gum, *L. styraciflua*, to which it is closely allied. It has, however, smaller leaves which are usually only 3-lobed. The Chinese are said to use the timber for tea chests. Native to southeastern and central China.

52334. LYCOPERSICON ESCULENTUM. Tomato. Var. Harrison's Prolific. From Burringbar, New South Wales. Seeds presented by B. Harrison who says that one plant of this variety covered in 12 months a space 16 feet in diameter, grew to a height of 11 feet, and produced over 100 dozen fruits. This plant is a vigorous grower and produces good-sized, smooth tomatoes with comparatively few seeds. Seeds available.

47918. MACADAMIA TERNIFOLIA. Macadamia. From Sydney, New South Wales. A small, evergreen, nut and timber tree. The edible nuts, are produced about 7 years from the seed. These nuts are nutritious, with a rich agreeable flavor resembling that of the hazelnut, but stronger. The timber is reddish, fine-grained, and takes a good polish; used for cabinet work.

51168. MALUS SYLVESTRIS. Apple. Var. Bordeaux Reinette. From New Zealand. Bud wood presented by H. R. Wright. A very fine dessert apple said by Mr. Wright to be very resistant to root aphid.

29507. MANGIFERA INDICA. Mango. Var. Kavasji Patel. From Poona, Bombay, India. Plants received from William Burns. An excellent variety producing fruits weighing from 1 to 2 pounds. Broad at base, narrowing abruptly toward apex. Flesh orange, thick, rather firm; subacid, moderately sweet. Flavor mild, very good. Fiber short; seed of medium size.

39338. MANIHOT DICHOTOMA. Manicoba. From Dr. V. A. Argollo Ferrao, Bahia, Brazil. This is one of the common rubber trees of Brazil where it is widely distributed. Its product is known in the market as "Ceara Jaquie" or "Manicoba rubber," and has been in past years an article of exportation. The thick fleshy roots are poisonous like those of the common cassava, *Manihot utilissima*, but may be made to yield an inferior grade of flour by thorough washing to remove the Prussic acid. The leaves are recommended as a forage of fair quality.

42463. MARANTA ARUNDINACEA. Arrowroot. From Jamaica. Tubers presented by W. Harrison, Superintendent, Hope Gardens. A plant producing fleshy tubers from which the true West Indian arrowroot of commerce is obtained.

49408. MIMOSA CERATONIA. From Mayaguez, Porto Rico. Presented by Mr. T. B. McClelland. A vinelike shrub, 8 to 16 feet in height, found in many places in the West Indies. The branches and stems are covered with small recurved prickles, and the flowers are borne in globose heads.

51370. MIMOSA GLOMERATA. From Arabia. Seeds presented by Dr. A. Robertson-Proschowsky, Nice, France. A perennial herbaceous plant whose stems die down in winter. In spring, there are developed long leafy shoots of which farm animals are very fond. The plant is spineless and quite drought resistant because of the long taproot. May prove of value as a forage crop in dry climates.

49308. MIMUSOPS MARGINATA. From Lourenco Marques, Mozambique. Seeds collected by Dr. H. L. Shantz, Agricultural Explorer. A tree 10 to 20 feet high, bearing a small plumlike fruit, dry and puckery when green but sweet when fully ripe. Eaten by the natives; also made into an intoxicating drink. May be useful as a stock for the Sapodilla.

49239. MIMUSOPS ZEYHERI. From Victoria Falls, Rhodesia. Collected by Dr. H. L. Shantz, Agricultural Explorer. A large shrub or small tree with narrowly oblong, leathery leaves, 3 to 4 inches long; and producing edible, sweetish drupes about an inch in length. May be useful as a stock for the Sapodilla.

49796. MYROXYLON ELLIPTICUM. From Antigua, Guatemala. Seeds collected by Wilson Popenoe, Agricultural Explorer. A thorny red-berried shrub up to 15 feet high which looks as though it would make a good hedge plant, the leaves being 2 to 3 inches long, of pleasing appearance, and the thorns rather formidable. When in fruit the red berries, which are about the size of cranberries or coffee berries, but of lighter color than the former, add greatly to the attractiveness of the plant. Sometimes known as *Xylosma elliptica*.

44709. OLEA EUROPAEA. Tafahi Olive. From Fedimine, Egypt. Plants arranged for by Prof. S. C. Mason. Of the three varieties grown in the Oasis of Fayum, the "Tafahi" (apple olive) is held in the highest repute. Though only moderately productive, its large size and fine appearance cause it to be in great demand throughout the Egyptian Delta. As its flesh is very soft and buttery when fully ripe, it is marketed about November first when beginning to color. The fruit is deep



purplish-black with lilac bloom, broadly ovate, with blunt apex terminating in a short acute tip.

49241. PAHUDIA QUANZENSIS. From Victoria Falls, Rhodesia. Seeds collected by Dr. H. L. Shantz, Agricultural Explorer. A fine, large, ornamental shade and timber tree. The beans are highly prized for ornaments. They are an inch long, ebony black, with a bony, scarlet aril, and resemble in form the jade pendants of the Chinese. The wood, called "Rhodesian mahogany," is very beautiful.

51009. PANDANUS TECTORIUS. Screw Pine. From Lamac, Bataan, Philippine Islands. Seeds presented by P. J. Wester, Agricultural Advisor. A shrubby, rarely erect plant up to 20 feet high, with aerial roots supporting the stem. Leaves leathery, glaucous green, sword shaped, 3 to 5 feet long. From the male flowers, borne in numerous cylindrical spikes, is obtained a perfume much esteemed in Java. The solitary spadix of female flowers is followed by a yellow or red oblong or globose fruit 6 to 10 inches long. Grows in sandy places near the seacoast, and deserves trial on the coast of Florida in comparison with the other species now grown there.

46380. PARKIA TIMORIANA. Cupang. From Zamboanga, Philippine Islands. Presented by P. J. Wester. A very large leguminous tree; often 115 feet high, with a wide-spreading crown, compound fernlike leaves and dense, pear-shaped panicles of small, yellow and white flowers. The pendulous black pods, 18 inches long, contain seeds which are roasted and used for coffee. It does very well in South Florida and is exquisitely beautiful, especially when young. Quite tender and should be planted if possible where protected by large trees.

52295. PHYLLANTHUS EMBLICA. Nelli. The Emblic Myrobalan. From Seharunpur, India. Seeds presented by A. C. Hartless. A moderate-sized deciduous tree of great beauty, producing long wandlike shoots with delicate pinnate leaves. It is said to produce edible fruits about the size of a gooseberry, with a fleshy outer covering and a hard 3-celled nut containing 6 seeds. The fruits are made into preserves and pickles. They form the emblic myrobalan tanning material of commerce. The red, hard, close-grained wood is used for building purposes.

50666. PHYLLOCARPUS SEPTENTRIONALIS. Flor de mico. From Guatemala City. Seeds collected by Wilson Popenoe, Agricultural Explorer. An unusually handsome flowering tree of broad, spreading habit, which reaches a height of 40 to 50 feet. The compound leaves, composed of 3 or 4 pairs of leaflets, are light green, and the crimson flowers, about an inch wide, are produced in small clusters. When in flower the tree may be compared to the royal poinciana.

42730. *PINUS BUNGEANA*. The White-Barked Pine of China. Seeds collected by F. N. Meyer, at Peking, China. A very beautiful pine with silvery white bark; a slow grower with rather sparse foliage but extremely striking when old. The bark peels off in flakes like the bark of the sycamore but the white appearance becomes noticeable only when the tree is old. Occurs wild in China, but much planted around temples. The seeds are roasted and eaten by the Chinese. Hardy as far north as Boston.

21970. *PISTACIA CHINENSIS*. Chinese Pistache. From Shantung, China. A very promising shade tree for those sections of the United States where the summers are warm and the winters but moderately cold. The young leaves are carmine-red, and the fall foliage a gorgeous scarlet and yellow. The wood, which is very heavy and not often attacked by insects, is used in the manufacture of furniture. From the seeds an oil is obtained which is used for illuminating purposes. The young, partly opened foliage buds, boiled like spinach, are sometimes eaten by the Chinese.

12783. *PISTACIA VERA*. Pistache. From Sicily. Collected by T. H. Kearney, Agricultural Explorer. Var. Bronte. Named after the Duke de Bronte from whose Sicilian estate it came. The pistache is a small tree which is cultivated extensively in the Mediterranean region for its delicate-flavored, highly nutritious nuts called pistaches or pistachios. It is adapted to a dry warm climate. A variety with large nuts, purplish inner skin, and deep green kernel. As the tree is dioecious, arrangements for pollination must be made. Female buds on Chinese pistache stocks.

17250. *PISTACIA VERA*. Pistache. Var. Large Red Aleppo. Introduced by Rev. A. Fuller of Saratoga, Calif., from Aintab, Turkey. One of the commercial varieties in Turkey, producing large nuts of excellent quality and appearance.

50667. *PLOCOSPERMA SP.* From Guatemala City. Collected by Wilson Popenoe, Agricultural Explorer. An ornamental shrub with small, opposite, ovate leaves, which produces small purple flowers. Native name "Barreto."

50668. *PLUMERIA ACUTIFOLIA*. From Guatemala City. Collected by Wilson Popenoe, Agricultural Explorer. A stiff, erect, small tree up to 25 feet in height, known in English as "Frangipani"; it is a source of the perfume of the same name. The branches are naked except for clusters of leaves at the tip, where also appear in late spring the deliciously fragrant, white, star-shaped flowers. Native name "Palo de la Cruz." Very susceptible to frost.



38282. PRUNUS ANSU. Apricot Plum. From Shantung, China. Scions collected by F. N. Meyer, Agricultural Explorer. This species produces a very delicious, golden yellow fruit with reddish blush. The fruit is about 2 inches in diameter. Seems to be a good shipper.

28960. PRUNUS ARMENIACA. Apricot. From Samarkand Province, Turkestan. Seeds collected by F. N. Meyer, Agricultural Explorer. This variety produces large, pale-yellow fruits with firm flesh of melting, sweet flavor. The fruit is freestone; the kernel sweet. Budded from selected seedling.

34265. PRUNUS ARMENIACA. Apricot. From Rome, Italy. Seeds presented by Dr. Gustav Eisen. This variety produces yellow freestone fruits of good size and quality. The flesh is firm; a good shipper. Budded from selected seedling.

34270. PRUNUS ARMENIACA. Apricot. Var. Crisomelo. From Rome, Italy. Seeds presented by Dr. Gustav Eisen. A very large, rounded-oblong apricot of orange color mottled with red. Flesh juicy, of delicious flavor. Budded from selected seedling.

33223. PRUNUS AVIUM. Cherry. Var. Garrafal le Grand. Plants received from Pedro Giraud, Granada, Spain. Purchased at the request of W. T. Swingle, of the Bureau of Plant Industry. A large variety of cherry, possibly of French origin. This cherry ripens about the same time as the Black Tartarian and is about the same size and color.

32751. PRUNUS DOMESTICA. Prune. From Langenbuhl, Switzerland. Obtained at the request of Felix Wenger, of Newberg, Oregon. This prune resembles the Italian, but is much larger. The tree is thrifty and vigorous.

41465. PRUNUS JAPONICA. From Manchuria. Seeds presented by Dr. R. J. Gordon. A hardy ornamental flowering shrub rarely over 5 feet high. The blush or rose-colored flowers, which appear with the leaves, occur in twos and threes. The fruit is globular or short-oblong, half an inch in diameter, shining wine-red.

45523. PRUNUS MUME. Japanese Apricot. From Yokohama, Japan. A tree resembling the common apricot (*P. armeniaca*) and probably hybridizing with it. Blooms very early, producing white to deep crimson, fragrant flowers. Fruits used extensively in Japan producing one of the sourest pickles known and forming part of the Japanese soldier's ration. There are many selected flowering varieties of superb beauty in China and Japan. These are seedlings from imported seeds for trial in experiments to determine the climatic range of the species or for use as a stock.

18587. PRUNUS PSEUDOCERASUS. Tangsi Cherry. Cuttings collected by F. N. Meyer. Agricultural Explorer. An entirely new species of fruiting cherry. Until recently the name *P. pseudocerasus* was erroneously applied to the Japanese flowering cherry. This Chinese species, which produces an excellent fruit that ripens 10 days earlier than the earliest fruiting cherry in California, is an unusually vigorous grower in mild climates. Deserves the consideration of plant breeders and cherry growers generally.

43176. PRUNUS SALICINA. Japanese Plum. Var. Alpha. From New Zealand. Plants presented by H. R. Wright. A medium-sized plum; skin dark, solid-red; flesh golden yellow, somewhat stringy; flavor pleasing, rather acid. Apparently a good shipper and keeper.

43182. PRUNUS SALICINA X (?). Plum. Var. Best's Hybrid. From New Zealand. Plants presented by H. R. Wright. Said to be a splendid dessert plum. A cross between the Cherry Plum and Ogon. The fruits are large, yellow, and of a pleasing flavor.

32670. PRUNUS SPINOSA X DOMESTICA. Hybrid Plum. From Kozlov, Russia. Scions presented to F. N. Meyer, Agricultural Explorer, by the plant breeder I. V. Mijurin. A hybrid produced by him between the Green Reine Claude and the Sloe (*P. spinosa*) a hardy spiny bush of Europe, Persia, North Africa, and Siberia. This hybrid produces small, dark purplish, clingstone fruits with a touch of green, flattened in shape, and of a slightly astringent flavor resembling that of the damson. Of good keeping quality and suitable for jam. Reported reasonably hardy in North Dakota. On Lovell peach stocks.

32671. PRUNUS SPINOSA X DOMESTICA. Hybrid Plum. From Kozlov, Russia. Scions presented to F. N. Meyer, Agricultural Explorer, by its originator, I. V. Mijurin, of Kozlov. A hybrid between the Green Reine Claude and the Sloe (*P. spinosa*). The fruits are of medium size, dark purple, and have a sweet flavor with aftertaste all their own. Inclined to be astringent. The trees are very productive and vigorous. Worthy of trial in our coldest regions. On Lovell peach stocks.

32673. PRUNUS SPINOSA X DOMESTICA. Hybrid plum. From Kozlov, Russia. Scions presented to F. N. Meyer, Agricultural Explorer, by its originator I. V. Mijurin. Fruits of medium size, freestone, greenish yellow, covered with a heavy bloom. Flesh firm; rather dry but of good flavor. Excellent for canning and shipping. A hybrid between the Green Reine Claude and the Sloe (*P. spinosa*). Worthy of trial in our coldest regions. On Lovell peach stocks.

48575. PSIDIUM GUAJAVA. Guava. From Foochow, China. Collected by J. B. Norton, Agricultural Explorer. Seedlings from a



variety of the well-known tropical fruit generally utilized for jellies and preserves. The fruits are round or pear shaped, 2 to 3 inches in diameter, and contain many seeds. The flesh is sweet and of a musky flavor. This variety has very large fruits, and its seedlings may produce superior strains.

24825. PUNICA GRANATUM. Pomegranate. Plants received from La Tour-de-Peilz, Vaud, Switzerland. A type of pomegranate remarkable for its vigor and hardiness. It is supposed to be the only variety with double flowers which will sometimes ripen its fruit in a climate like that of central France, and even near Paris if it is planted in a favorable exposure.

27049. PUNICA GRANATUM. Pomegranate. Var. Krylezy-Kabuk. Cuttings of a Russian variety collected by F. N. Meyer near Sukhum-Kale, Caucasus. Fruit of medium size and showing little tendency to crack; skin medium thick, uniform deep red; core medium, grains deep red; pulp very juicy, slightly acid, rich vinous flavor. Should be a good shipper. Closely resembles the variety "Wonderful."

27966. PUNICA GRANATUM. Pomegranate. Var. Kyrmisi Kabugh. Cuttings of a Russian variety collected by F. N. Meyer in the Caucasus. Fruits large; skin rather thick, of uniform deep crimson; core rather large, grains deep crimson; pulp very juicy, semi-acid, rather rich flavor, seeds hard.

33227. PUNICA GRANATUM. Pomegranate. Var. Negro Monstruoso. Cuttings obtained from Granada, Spain, by Walter T. Swingle. One of the principal varieties grown in the vicinity of Granada, Spain; of the "Spanish Sweet" type. This has proved an excellent variety in California.

40736. PYRACANTHA CRENULATA. From Yau pu ko, Kansu, China. Seeds collected by F. N. Meyer, Agricultural Explorer. Small attractive shrub with glistening green leaves, and bearing in the fall a multitude of bright red berries. Of value as an ornamental dooryard shrub for mild-wintered sections of the United States.

38263. PYRUS CHINENSIS. Pear. From Honan, China. Cuttings collected by F. N. Meyer, Agricultural Explorer. A variety with large round-oblong fruits of a dark yellow color and good quality. Not a good keeper, but will prove a valuable variety for canning purposes. This pear is superior to the "Kieffer" for eating purposes. Seems very blight-resistant. Chinese name; "Pin li" (luscious pear).

33207. PYRUS COMMUNIS. Pear. Var. Favorita. From Granada, Spain. Introduced by Walter T. Swingle. A large full-necked pear of greenish yellow color splashed with red. The flesh is tender, melting, and juicy. Has fruited in California.

This pear ranks with the best in quality, size, and uniformity of shape. Grafted plants.

30352. *PYRUS SEROTINA*. Pear. Var. Nanshi'pt. From Karawag, Chinese Turkestan. Cuttings collected by F. N. Meyer, Agricultural Explorer. The fruits of this variety are small, oval, and slightly flattened at the ends, green, sometimes splotched with red, with crisp sweet flesh. A remarkably juicy variety and a good keeper and shipper. Apparently very resistant to the blight. Will stand intense hot weather.

52211. *RHAMPHICARPA FISTULOSA*. From Anglo-Egyptian Sudan. Seeds collected by Dr. H. L. Shantz, Agricultural Explorer. This plant, which somewhat resembles a larkspur, produces white flowers three-fourths of an inch across. May prove valuable as an annual border plant.

44544. *ROSA BANKSIAE NORMALIS*. From Western China. Presented by the Superintendent, La Mortola Botanic Gardens, Ventimiglia, Italy. E. H. Wilson saw trees in China 50 feet high completely festooned with this rose. The fragrant, pure white flowers and abundant red fruits make it most attractive. The bark of the root is used locally for strengthening fishing nets and dyeing them brown.

39593. *ROSA ODORATA GIGANTEA*. Presented by E. D. Sturtevant, of Hollywood, Calif. The Giant Rose of Burma. As grown in Burma under cultivation in vegetable mould underlain with limestone, where it got plenty of water and was shaded, it covered, according to Hildebrand who grew it there, a clump of trees 50 feet tall. When in bloom it looked like a sheet of white, and filled the air with its perfume. Its white flowers reach a diameter of 6 inches. Deserves special trial in tropical regions, and also where tea roses do well; since hybrids are reported, plant breeders may find it useful.

49332. *RUBUS GLAUCUS*. From Tactic, Guatemala. Seeds collected by Wilson Popenoe, Agricultural Explorer. Native name "Tokan uuk." Considered by Popenoe the most remarkable Rubus of the Verapaz region and one which seems to possess unusual promise. The fruits resemble a loganberry in character but their flavor is more nearly that of a red raspberry. They are often an inch in length, and vary in shape from round to oblong. They are produced on short laterals. The plant likes a heavy soil and plenty of moisture. Deserves the attention of plant breeders.

49333. *RUBUS URTICAEFOLIUS*. From Tactic, Guatemala. Seeds collected by Wilson Popenoe, Agricultural Explorer. Native name "Tokan yak." A wild blackberry abundant in the Guatemalan highlands at altitudes of 3,000 to 5,000 feet. A robust and vigorous species forming a compact bush up to 15 feet in



height; the most productive of any in the Verapaz. The canes are densely clothed with soft red spines; the leaves have 3 to 5 leaflets; the fruits, black when ripe, half an inch in length, are juicy and sweet, somewhat resembling those of the blackberry; the seeds are small, not hard.

50681. RUBUS SP. From San Jose, Costa Rica. Seeds collected by Wilson Popenoe, Agricultural Explorer. This species produces fruits about an inch long which resemble in general character the blackberries cultivated in this country. The quality is fairly good, though the flavor is a trifle acid. May prove of interest to those carrying on breeding experiments with blackberries.

50907. RUBUS SP. From Zanzibar. Seeds collected by Dr. H. L. Shantz, Agricultural Explorer. This vinelike plant produces a red raspberry of fairly good flavor. May prove of interest in breeding experiments.

51535. RUBUS SP. From Kenya Province, Kenya Colony. Seeds collected by Dr. H. L. Shantz, Agricultural Explorer, who reports it the only blackberry he saw in Africa. The fruit is a little reddish but is apparently a true wild blackberry with a fairly good flavor. For use of hybridizers.

49777. RUPRECHTIA SP. From Guatemala City. Seeds collected by Wilson Popenoe, Agricultural Explorer. A small Central American tree with alternate ovate leaves and small white flowers. It blooms in January.

46026. SABINAEA CARINALIS. From Dominica, British West Indies. Seeds presented by Joseph Jones. A shrub or small tree, known in Dominica as "Bois Charibe," with pinnate leaves and large, bright scarlet flowers which appear before the leaves and make a beautiful mass of color. According to Jones, it is one of the most showy of the native plants of Dominica. Especially adapted for dry rocky hillsides where it will be exposed to the scorching sun for 3 or 4 months.

44995. SALVIA HEMPSTEADIANA. From Purula, Baja Verapaz, Guatemala. Seeds collected by Wilson Popenoe, Agricultural Explorer. A perennial herbaceous plant found at an altitude of over 5,000 feet. Reaches a height of  $1\frac{1}{2}$  to 2 feet and produces spikes of brilliant blue flowers tubular in form and about an inch long. Very showy and attractive when in flower. Blooms well in latitude of Washington.

49389. SALVIA POPENOEI. From Tucuru, Alta Verapaz, Guatemala. Seeds collected by Wilson Popenoe, Agricultural Explorer. A handsome plant, commonly 3 to 5 feet in height, and bearing terminal spikes of bright crimson-scarlet flowers resembling those of *S. splendens* in color. Kekchi name "Tutz-unún."

44900. SARACA DECLINATA. From Buitenzorg, Java. Presented by Dr. J. C. Koningsberger, director, Botanic garden. An ornamental tree rarely more than 20 feet high, with alternate pinnate leaves, and bright yellow, reddish-tinged flowers on crimson peduncles arranged in corymbs, sometimes on the trunk. The flat pods are about a foot long, and of a beautiful purplish-crimson color when immature.

45810. SCHOENOCAULON OFFICINALE. From Caracas, Venezuela. Presented by H. Pittier. The "Cebadilla", a bulbous plant growing on the eastern declivities of the volcanic range in Mexico and parts of Central America. The fruit is a source for veratrine, a powerful irritant and counterirritant. Cultivated in Mexico where the bulb is used as an expellant of intestinal worms, but is dangerous in its action.

52513. SINDORA SP. From Bangkok, Siam. Seeds collected by J. F. Rock, Agricultural Explorer. An ornamental tree with abruptly pinnate leaves having few leaflets, and small flowers in panicles.

49972. SOLANUM SP. From Elizabethville, Belgian Kongo. Seeds collected by Dr. H. L. Shantz, Agricultural Explorer. A decorative Solanum, with deep lavender flowers  $1\frac{1}{2}$  inches in diameter and orange-colored fruits of the same size.

47216. SPATHODEA CAMPANULATA. From Southern Provinces, Nigeria. Seeds presented by A. H. Kirby. A strikingly handsome evergreen tree, up to 70 feet tall, with a smooth white trunk and a conical head of pinnate foliage. The large, orange-scarlet flowers are borne in many-flowered clusters. Easily propagated from seeds. Cultivated throughout the Tropics. Has flowered in southern Florida. It is very tender and needs protection.

51365. SPHENOSTYLIS STENOCARPA. From Kisantu, Belgian Kongo. Seeds presented by Father Hyacinthe Vanderyst. This legume forms edible tubers whose flavor is similar to that of the potato. Cultivated by the natives in the region of Tabora. Tanganyika Territory.

51897. STILLINGIA SEBIFERA. Chinese Tallow Tree. Seeds produced at the San Antonio Experiment Station from a tree grown from seeds collected by F. N. Meyer at Tangsi, Chekiang, China. This tree occurs in all the warmer parts of China where it reaches a height of 40 to 50 feet and a diameter of 5 to 8 feet at maturity. The 3-celled fruits are valued as the source of two fatty substances extensively used in China for candle-making and also exported to Europe in considerable quantity for the manufacture of soap. The elliptic seeds are covered with a white fatty substance which is removed by steaming and rubbing through a bamboo sieve. This fat, moulded



into cakes, is known as the "Pi-yu" of commerce. The seeds, from which the fat has been removed, are expressed and the oil obtained is known as the "Ting-yu" of commerce.

42596. *STRYCHNOS SPINOSA*. From Inhamban, Mozambique. Presented by Rev. P. W. Keys. A remarkable east African shrub or small tree with evergreen foliage and short spines. The large, round, green fruits, with extremely hard shells, turn yellow when ripe and have the fragrance of cloves. The seeds contain a small amount of strychnin. The flesh is edible, reminding one faintly of a brandied peach.

43741. *TECOMA ARGENTEA*. From Asuncion, Paraguay. Presented by C. F. Mead. When in bloom this peculiar looking tree is strikingly attractive with its great clusters of sulphur-yellow flowers which can be seen from a considerable distance. In Paraguay it grows to 25 feet in height, along the upper Paraguay River in the Chaco and in Matto Grosso. The bark is medicinal. It has flowered in South Florida and appears promising.

48259. *TERMINALIA* SP. From Victoria Falls, Rhodesia. Seeds presented by J. Burt-Davy. The astringent fruits of several species of this genus are used for commercial tanning and dyeing purposes by the natives of India, and exported to Europe. They have been imported in considerable quantities to this country for use in coloring calicos. The genus comprises a large number of trees and shrubs scattered over the Tropics of both hemispheres.

50501. *THEOBROMA CACAO*. Cacao. From Para, Brazil. Seeds presented by André Goeldi. A Brazilian variety of cacao, of interest to cultivators of this tree in other regions.

50588. *ULMUS PUMILA*. Elm. From China. Seeds presented by the Forestry Department, Ministry of Agriculture, Peking, China. A shade and timber tree remarkably resistant to drought, alkali, and severe extremes of temperature. The timber is used in China mainly for the manufacture of carts. This tree is of exceptional promise as a shade tree for the semi-arid regions of the United States, where it has made phenomenally rapid growth. Has also done well in the colder sections of the country.

49785. *VERBESINA* SP. From Guatemala City. Seeds collected by Wilson Popenoe, Agricultural Explorer. An ornamental shrub or small tree which produces a profusion of small white flowers in August. Native name, "Sosa blanca."

47574. *VERONICA* SP. From Auckland, New Zealand. Seeds presented by J. W. Poynton. An attractive, large-leaved shrub



with purple flowers. One of the characteristics of the New Zealand flora is the large proportion of Veronicas, many of which are very attractive.

47575. VERONICA SP. From Auckland, New Zealand. Seeds presented by J. W. Poynton. An ornamental shrub with small leaves and light blue flowers.

43731. VIBURNUM DILATATUM. Native to Japan and China. Received through the Arnold Arboretum. A deciduous shrub, 6 to 10 feet high, with pure white flowers followed by bright red, roundish fruits. It is a very profuse bloomer flowering in June; the flowers are all fertile. This is one of the most attractive of the shrubs producing red berries in late autumn.

21976. VITEX NEGUNDO INCISA. From Lungtung, Shantung, China. Seeds collected by F. N. Meyer, Agricultural Explorer. A tall perennial which, if left alone, grows to a height of 20 feet. The plant resists alkali remarkably well. It has foliage delightfully fragrant when bruised, and the attractive violet-blue flowers, which occur in terminal racemes, are diligently sought after by the bees. The Chinese use the annual shoots for basketry manufacture. Should do well in alkaline regions where it is not too cold, as an ornamental and as a bee plant. Seeds available.

49566. VOACANGA GRANDIFOLIA. From H. L. Lyon, Honolulu, Hawaii. Collected by J. F. Rock, Agricultural Explorer, on Mount Gedeh. A shrub or small tree, native to Java, with opposite, dark-green leaves up to a foot in length, and raceme-like clusters of white flowers.

43053. ZEPHYRANTHES SP. From El Banco, Bolivar, Colombia. Presented by H. M. Curran. A small, attractive, white-flowered bulbous plant allied to the amaryllis. Cultivated as a garden ornamental by the natives along the banks of the Magdalena River.

44442. ZIZIPHUS MISTOL. Mistol. From Tucuman, Argentina. Seeds presented by H. F. Schultz. A spiny tree, native to Argentina, up to 30 feet high, with oval, leathery leaves about an inch long, and edible, black fruits one-third of an inch in diameter.

48261. ZIZIPHUS MUCRONATA. From Victoria Falls, Rhodesia. Seeds presented by J. Burt-Davy. A small tree whose edible fruit is said to be used by the natives in making a bread which tastes like gingerbread, and to be used in the preparation of a pleasant beverage. The leaves are used medicinally by the natives; a decoction of the root is used for lumbago. The hard wood is used for making wagons, etc.





